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The relation of games to life in general is discussed, with the suggestion that games constitute an excursion or "time out" from goal-directed activities in life, in which an alternative set of rules are established for a delimited period A game thus constitutes a short-term parallel to life in general. As such, it acts, for children, as a device through which they explore social organization, comparable to their explorations of the physical environment at an earlier period of life. The use of games by the sociologist constitutes a formalization of this means for learning about social organization. An extended example of the use of a game involving collective decisions is presented to show this role of games in the development of social theory (AUTHOR).



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GAMES AS VEHICLES FOR SOCIAL THEORY

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Games as Vehicles for Social Theory

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Games and play have been examined by a number of authors, with attempts at identifying their relation to life activities, and their distinctive character. The importance of such an attempt lies in what it might tell us about the potential usefulness of games for the stuyd of life in general, and in particular, social organization. However, the general absence of any success in these attempts lies, I believe, in failing to look carefully at the nature of life itself.

If the sequence of activities that constitute life is seen itself as a game, as Bernard Suits has done, then it appears possible to distinguish those activities which we call "play" and "games" from the remainder of this sequence of activities.

In describing life as a game, I mean to give it the formal characteristics of a game: (a) the players have goals toward which they act, although these goals may be changed by the course of the game; (b) their actions are governed by a set of rules which specify those actions that are prescribed, those

Bernard Suits, "Is Life a Game We are Playing," Ethics, 77, 1967, pp. 209-213. See also Bernard Suits, "What is a Game," Philosophy of Science, 34, 1967, pp. 148-156. Suits argues in the second of these papers that games are not distinguishable from other activities in life except by the explicitness of its rules and its goal.



^{*}See Michael Inbar, "Toward a Sociology of Autotelic Behavior," U. of Michigan, mimeographed, 1967, for a review of the numerous attempts to capture the essential difference between games and play on the one hand, and all other activities on the other.

that are permitted, and those that are proscribed: (c) there is another set of rules, which may only be discovered in the course of play, or may be stated in advance, which specify the consequences of each action in aiding or inhibiting each player's movement toward his goal.

These are perhaps as good a set of defining properties of a game as any; yet at the same time, they define most of the activities in the sequence which constitutes life. Most, but not all. For if life is conceived as a game with these properties, then those activities we know as "play" and "games" do not fit. They are not actions of the player toward his goal in life, but actions quite irrelevant to the otherwise connected sequence.

Their relation to life can best be seen by examining a specific event that arises in all games: the "time out." When playing a game, a player will ask for, or the rules will specify, a "time out," that is, for a break in the sequence of play, which is not to be counted as part of the play, and during which the rules of the game no longer govern. The players may do anything during the time out, but when play begins again, it is wholly unaffected by the activities during "time out." From the point of view of the game, these activities did not exist. They were taken only because some other needs of the players, often personal physical needs, necessitated the time out.

My essential point is that if life is conceived as a game, it too has its time outs; and the activity which takes place during these time outs is either play or games - play if it does not proceed according to the criteria for a game set out above, and a game if it does. Play and games "don't count"



in the normal sequence of life activities, just as activity during time out in a game "doesn't count" in the game. In this view of life, all else except play and games consists of a connected sequence of actions directed toward goals; play and games constitute the interruption or time out in this sequence. Games are more fully time out, for they are more fully insulated from the normal rules governing the sequence of life activities by a set of explicit rules of their own.*

When one establishes the rules of a game, he in effect abrogates some of the rules of everyday life. For other purposes, players might want to continue to obey some of the everyday rules that do not conflict with play of the game. For example, players might continue to maintain the rule of not killing another person, although in a game of football they abrogate the rule of not hitting another person violently with one's body, because such violent aggression is allowed by the rules and helpful toward reaching the goal.

Why, then, do persons playing this large game of life take these time outs which constitute play or games? The most reasonable explanation is that they do so for the same reason they take time out in a parlor game - because



This view of games runs immediately into the objection that some games are played as part of life itself, as an occupation: a professional athlete, or a professional card-player, does not take time out from life to play his games; his sequence of life activities includes these games as an intrinsic part.

This objection is quite valid, but it shows merely that games can be used in the sequence of life activities - they can be brought back into life, ordinarily by connecting success in the game to some consequence in the regular sequence of life, such as money reward, or prestige. But this "connecting up" to life in general requires an extrinsic operation; the game itself is by definition self-contained and unconnected to the normal life sequence.

they have psychological needs and physiological needs - which can only be satisfied by declaring a temporary moratorium - taking time out and attending to the needs.

It appears clearer, assuming all this is so, that players in the game of life should take time out for play than that they should take time out from life for a game. For this is a postman's holiday, playing games during the time-out from the large game itself.

The puzzle of why they do so leads to important questions in socialization, for it is recognized that the playing of games is an important element in socialization. Thus the suggestion arises that in playing a game, a child or a man is taking time out from a single sequential set of activities which constitute a complex game to establish a parallel set of activities, but with beginning and ending, which will aid him when he returns to the continuing sequence. One can see the possibility for a variety of types of socialization aids and psychological aids provided by this delimited and unconnected parallel set of activities; but it is not my intent to investigate these here. Rather, my aim is to indicate how the general category of activities that are described as games, these time outs from life, can because of their peculiar resemblance to life itself, be important elements in the construction of social theory.

In doing this, it is useful to focus on one function that games appear to have for children. In learning to cope with the physical environment, the young child carries out a variety of playful and exploratory and experimental actions toward this environment: putting objects in its mouth, trying to



grab a handful of water, putting its fingers in a fire, playing with clay or mudpies to make new shapes, rolling a ball downhill, and numerous similar actions. These actions occupy a large portion of time for a period during which the child learns certain rules of the physical environment. He does not learn physical theory, but a set of general laws or empirical regularities. He learns, in a qualitative way, the laws of mechanics, and a few chemical facts.

When children begin to cope with a social environment, they find themselves subject to a more complex framework of action-and-response.

Interaction with another person involves a double-contingency: the other's response is contingent upon one's own action, just as one's own action is contingent upon his. Furthermore, the contingent action is not an automatic response governed by mechanical laws, but a purposive action, directed by the actor's goals, and constrained by the rules of the social organization within which he is acting.

This increased complexity brings enormous learning problems for a child, problems that require a learning environment comparable to that provided in an early period of development, by exploration and experimentation with the physical environment. The social play and games of young children constitute, I believe, such a comparable environment. What the child learns in them is not social theory, but empirical regularities about the way other persons behave in particular situations, and in response to particular kinds of actions of his, when they have certain goals, and are subject to certain rules or constraints. He learns, in a qualitative way, the laws of a system



of behavior comparable to that of mechanics, that is, human purposive behavior.

In play, he learns about behavior; in games, however, with explicit rules, he learns about a system within which purposive behavior takes place. The necessity for establishing games with rules separate from the normal sequence of life activities lies in the fact that this normal sequence fails to provide a wide enough range of experimentation and exploration of social organization. Piaget's observation of children playing marbles shows the extremely elaborate and detailed set of rules and procedures that children develop and learn, and the numerous variations in these rules - a far richer, more precise, and more directly enforced body of rules than the rules governing their current sequence of normal life activities.

These activities of young children suggest that just as casual exploration of the physical environment provides the experience which forms the basis for physical theory, exploration of the social environment through games may constitute a fruitful avenue toward social theory. In physical science, experimentation formalizes the practical investigation that each of us carries out upon his physical environment; similarly, games with explicit rules and structure may be the appropriate formalization of the practical investigation of our social environment that each of us carries out in childhood games. This methodology contrasts sharply to those sociologists presently use as avenues toward social theory. In contrast to survey research and observations in natural settings, it depends on the creation of special environments, governed by rules that are designed precisely for the study of the particular form of organization. In



quent response, the principal element in game methodology is the construction of rules which can elicit a given form of social organization. The involvement of persons in a game is also different from the use of persons (or "subjects") in psychological experiment. In a game, the goals of each player, and the incentive to play, must be generated by the rules of the game itself. The players are not passive subjects, but active participants or players. As in any social subsystem, the players in a game find their rewards intrinsically in the game itself, while an experiment ordinarily merely uses the services of its subjects for a period of time. There are, to be sure, a few sociological experiments that have many of the characteristics of games; but it is relatively unimportant whether these are called games or experiments.

If the potential of games for sociology is to be realized, then an appropriate methodology is required, a paradigm appropriate to the investigation of social structure in the same way that the experimental paradigm is appropriate to investigation of the physical or psychological structure.

The physical environment interests us as persons because of the regular responses it makes to our own actions toward it, regularities that can be described by physical laws. It is a property of the physical environment that the responses it makes depend only on the physical character of the actions taken upon it, independently of whether these actions are taken upon the initiative of a person, or derive from some other source. That is, the same physical laws govern the vertical velocity of a falling body, whether it is



dropped by Galileo in a physical experiment or is an apple falling from a tree without human intervention. As a consequence, an experimental paradigm can be established in which the human experimenter, in order to learn the action-principles of the physical environment, himself acts upon the physical system by carrying out a particular physical intervention. He observes the response of the physical entity, and then if he has described both his action and the response in terms of the appropriate physical parameters, he can describe the regularity or lawfulness in the response of the physical body.

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The experimental paradigm in physical science thus consists of (1) human intervention; (2) description of the physical properties of that intervention; (3) measurement of the response of the physical system to that intervention; and (4) discovery of the regularity or relation between the physical properties of the intervention and the physical properties of the system's response.

The child's probing of his physical environment by attempting to grasp water, or by rolling a ball, or by putting his hand or a piece of paper in the fire constitute the early prototypes from which the paradigm is itself developed. The child, as the physical scientist, wants to learn about the behavior of his physical environment so that he can anticipate or predict its action in a future similar circumstance.

In constructing and playing a game, a child is engaged in a somewhat different endeavor. He is not merely probing a responsive environment composed of physical entities. He is studying a system of social behavior, and his own actions, governed by the rules of this system, are an intrinsic part of the system.



Before any action takes place, his own or that of others, he must establish a set of rules which are to govern the actions of himself and the other players. These rules limit the kinds of actions that players may carry out, and also provide their motivation, by defining their goals. Thus setting up a game is establishing a new and different set of relations between elements of a system, that is, players, and then observing the behavior of the players and the functioning of the system. The players in a game do not respond to the person who establishes the game, for he is outside the system, unless he himself becomes a player; they respond to the other players.

The child entering a game is entering a new social order; and he learns both by observing his own behavior and the behavior of others in that order.

His necessity for entering a new social order to learn these things lies in the fact that he learns by the method of comparative observation, by the differences in behavior under different sets of rules. But if he were interested only in learning about behavior, about how people respond under different circumstances, he could do so through social play, in activity that follows the paradigm of investigation in physical sciences. He can learn the responses of people by teasing them, cajoling them, by obsequeous actions, by anger and threats, by all sorts of probes that young children are wont to carry out, actions comparable for his social environment to the action of grasping a handful of water in learning the properties of a liquid.

In playing games, he is doing something else. He is not learning about the responses of persons so much as he is learning about the functioning of



systems of rules. The elements in these rules are not persons in the usual sense; they are actors-in-roles, utilizing some of the properties of persons, but not others. In a baseball game, a shortstop is an actor in a role, utilizing some properties of appropriately skilled individuals (the ability to catch and throw a ball, the knowledge of where best to throw a ball once caught), but not utilizing others (his preference for dogs above cats, his belief in God, his childhood memories, the color of his hair). In a game of hide-and-seek, the elements of the game are not full-fledged persons, but rather players having those properties relevant to play: ability to run, to hide, to find another. The rules of the game take into account those specific properties of individuals that are relevant to performance of the player's role, but not others.

Sometimes the rules take specific note of physiological limitations of the players, as when an athletic game is divided into quarters, or chukkas, or halves, or rounds, with a designated rest period in between, or even a break for lunch and a break for tea, as specified in the rules of cricket. And in children's games, special rules are often established for a child much larger or much smaller than the others, to take account of his prowess or his limitations. But beyond this recognition in the rules of certain attributes of individuals that might interfere with the game if they are not attended to, the rules disregard other attributes of individuals. The game is a system of roles in relation, and play of the game shows how that particular system of roles in relation operates.

Thus the child's use of games in exploring his environment is much different than his physical probes of the physical objects around him, or his



emotional and behavioral probes of the human objects around him. It is an exploration of systems of roles, of social organization. This exploration has some features that indicate its nature and extent. For example, in observing the play of games among young children, an adult is often struck by the seemingly endless arguments and discussions over rules. The game often is stopped for long periods because of arguments about violations of the rules, and arguments about the rules themselves. The adult is often tempted to intervene to get the game going again, in the belief that nothing can be accomplished if the children can't even agree on enough rules to keep playing. But the adult may here be wrong, for it may be that the principal value of the game for the child is in learning about rules of a social system: their universality, their justification (as in the game of life, some rules in any game can be justified in terms of goals of the player, others in terms of maintaining a viable social order; still others are arbitrary rules, or "ultimates" that have no justification), their modifiability, their fairness, their enforceability and means of enforcement, and so on.

An adult also observes that a young child of age three or four finds it difficult to accept the universal application of rules to himself and others in the same role. In playing hide and seek, he attempts to have different rules apply to himself when hiding than to others. Or in learning to play checkers, he refuses to accept the rules when they lead to his loss of the game. In these actions, he is apparently still in the process of learning to separate the idea of social organization, and rules governing role relations, from his particular position within the organization.



The conclusion I want to draw from all this is that the construction and observation of games constitute for the sociologist that activity analogous to the physical scientist's or psychologist's use of experiments, in that each constitutes a formalization of the means that children use in learning about their environment. The activity in the two cases is quite different: In the case of physical or psychological experimentation, a specific and measurable probe or action or stimulus on the part of the experimenter, followed by a measurement of the response of the physical or human object of the probe. In the case of the game, the sociologist's action is the establishment of a social organization, a set of roles in relation and goals of the players, defined by the rules of the game; and then observation of the way this "hypothetical" social organization functions.

An extended example may make clearer how the sociologist may use games in this way. I will use as an example a game of collective decisions that I have worked with for the past several years. The game was devised because of the long-noted paradox (usually called Condorcet's paradox) that any decision rule to choose a collective action from among several alternatives can produce inconsistencies, such as selection of a different alternative depending upon the order in which pairs of the alternatives are voted on. I reasoned first that the problem is more fundamental yet: if there is only this one collective action that binds the members of this collectivity, then why would any member participate in an action that was not his first preference; why could any collection action be taken that was not unanimous? The answer



appeared to lie in the fact that a set of individuals are seldom related through only a single collective action, but ordinarily through a whole sequence of actions; and that it is the possibility of benefits he might experience through some other action in this sequence which allows the individual to accept a collective decision that he sees as inimical to his interests.

To observe, then, how such collectivities function without breaking down (as they would be expected to do if only one action is considered in isolation), I constructed a game with 6-11 players and eight collective actions to be taken, with individuals' interests differing on any one action, and with the collective decision on each action to be made by majority vote of the players. The rules of the game in general followed parliamentary procedure.

In observing the play of this game, it quickly became evident not only that players took account of future possible actions when voting on the first action, but that they used their interests in those future actions to mitigate their losses on this one. The principal (but not the only) means by which a player did this was to give up his vote on this issue in return for a promise of a vote from another player on a future action of more importance to him; or if this issue was itself of great importance, to promise a vote on a future issue in return for a vote from another player on this one. Other means were used as well: since promises were not necessarily kept, a player would offer a vote on an action to the player who had control over determining which action was to be voted on next, for the right to determine what action that would be; and since the likelihood of obtaining agreements depended upon one's



reputation for keeping promises, a player would often forego a potential immediate gain if it meant breaking a promise, but more so early in the game than later.

Nevertheless, some players lost, sometimes because they were intrinsically disadvantaged through the distribution of interests, sometimes because they railed to use their resources efficiently. What kept them playing?

Several games were played in which the players kept the same distribution of interests for each play of the game. After the first game, a coalition of players formed all of whom could win by a given pattern of bloc voting (since it was possible for a bare majority of the players to win). The other players quickly lost interest, and the game broke down. Thus between games as well as within a game, it became clear that what allowed the collectivity to continue to operate was the possibility of gains in the future; when that possibility was removed, then the collectivity broke down.

As a result of playing this game and observing its play, a possible conceptual framework for describing the system emerged. It was clear that each player was using his votes as generalized resources to realize his interests, recognizing that his vote on one action was valuable to others even if he had no interests in the action. Thus I conceived of each player having as resources his partial control over each action, and as interests his potential gains or losses resulting from each action. His behavior could then be described as employment of his resources to best realize his interests. The crucial element of the social theory was not this action principle, which



is merely a restatement of rational or purposive behavior, but the concepts of partial control over actions, and interests in (or consequences of) each action for each player; and the emergent concepts of the <u>value</u> of control over an action (defined as the interests that powerful actors had in the action); and the <u>power</u> of actors (defined as control over valuable actions). This then led into a formal mathematical theory for describing interdependent actions in any collectivity, work that I will not discuss here.

Returning to the game, it was evident that to best realize their interests, players were exchanging resources, resources given to them by the rules of the game, i.e., by the constitution of this collectivity. The question arose: how was this exchange different from economic exchange in a barter economy? The most obvious difference is that the exchange was neither physical exchange in which the resources actually came into a new owner's possession, nor an enforceable contract. As a consequence, it was not negotiable. But the most obvious was to examine the difference was to change the rules of the game to make the vote a physical commodity, a piece of paper that could be transferred and voted by whoever held it at the time of the vote. Purely conjectural, or speculative, or theoretical activity could not carry very far, because of the absence of a well-developed conceptual framework. In play of the game, this change led to an intensification of the market in votes, a much greater likelihood that two persons could make an exchange, since a vote came to have value in exchange to a prospective buyer, even if he had no interest It enauled players to more fully maximize their interests, in that issue.



because it facilitated the exchange of resources.

Again, since each player had equal control over each action (one vote), the question arose, why not make exchange unnecessary by giving each player eight votes, any of which he could cast on any action. This allows each player to directly concentrate his resources on those actions that interested him most, and reduce the inefficiencies brought about by the exchange process.

In play, it quickly became clear that such a distribution of control changed a number of things. First of all, the vote could not be taken by open ballot sequentially, for the last players to vote found themselves in an especially advantageous position: they could vote only the precise number of votes necessary to win, and save others for a future action. But even when the vote was taken secretly, game strategy, in the use of game-theoretic principles, came to be much more widespread. The game was no more a zero-sum game than before, but now that no joint action such as exchanging votes was necessary to realize one's interest, each player's activity came to be concentrated upon the question of what is the best deployment of forces. He no longer carried out marginal, or incremental, activity, as was previously necessary in gaining control of an action, and thus had little way of knowing what was the best action. It was more nearly seen, and responded to, as a game of pure conflict of interests.

In this case, as in the case of the physically exchangeable votes, the variation in rules did not lead to new conceptual development. It did, however, show what was the empirical consequence of these rule changes, thus



providing a stronger base for the development of a conceptual or abstract description of the variations.

Another variation studied by a change in the rules was the introduction of a two-stage decision process through the use of committees. The action could not be brought before the collectivity as a whole except by positive action of a smaller committee. It was quickly clear that this enriched greatly the amount and kinds of resources of the collectivity members. Much of the bargaining, negotiation, and exchange was now directed to obtaining a positive action in the committee. Second, the smaller size of the committees, about 1/4 the size of the collectivity, made the committee action much more dependent upon specific individuals, and thus concentrated the control of particular actions much more in the hands of a few people. Third, this two-stage structure of decision-making resulted in many fewer positive actions than in the single-stage case, even though the distributions of interests for and against the actions remained balanced overall, as they were in the case of the single stage decision.

It might well be argued that these same generalizations might even more easily have been stated from a casual acquaintance with the American Congress, or another legislative body with a committee structure. That may well be so; in the case of the first simple form of the game, naturally-occurring social organization may have provided the necessary framework, and made unnecessary the construction of a game with special rules. But if so, it is merely a fortunate circumstance in this case; another variation of theoretical interest, such as physical transfer and full negotiability of votes, may not exist in society.



Some variations in rules we have not been able to carry out, because the very expression of the rule requires a degree of theoretical sophistication beyond the present state. For example, in social organization generally, the future actions which players balance off or negotiate against current ones consist of an endless sequence, arising in part through the action of individuals, but in part through external events. Such a structure must obviously change behavior very much, since explicit vote exchanges are not possible. Something like generalized political credit must come to exist; but we have not yet been able to establish the appropriate game structure, and thus can only speculate.

A more important variation in the rules that we have not yet been able to develop an appropriate set of rules for is the use of resources from outside the actions of a collective body to affect those actions. If two members of a collectivity are also members of a second collectivity, an exchange can be made involving resources of both collectivities. We know from observation of naturally-occurring social organization that these exchanges tend to be negatively sanctioned and defined as illegitimate by the collectivities involved; but exploration through establishing a range of such social organizations as games is necessary in order to gain a better idea of the processes involved: what determines the rates of exchange, what is the effect on the autonomy of each collective body, and so on.

These examples are sufficient to indicate the way in which the construction of games with various rules can be used toward the development



The pattern by which this can best occur is still only very roughly known, but it clearly involves first a step of abstraction in being able to set up appropriate rules and thus establish the game, and then a second step of abstraction in drawing from the miles-and-behavior a conceptual scheme that constitutes social theory. The first stage of abstraction, in establishing the rules of play, is part of the conceptual labor, for it often involves making explicit, in the information provided to the player, those considerations that remain implicit in actual social organization. For example, in the collective decision game, the interests of each player, which determine his winning or losing, are the votes of his constituents toward his reelection. exposes this, so to speak, by making it explicit in the rules rather than implicit. Thus the game is embodying a particular structure of events, control over events, and interests in events, which constitute the beginnings of a theory about the social organization of which legislatures consist. But formulation of the rules and play of the game is only a first step of abstraction, for it still involves the concrete playing-through of the game. The second step of abstraction is the development, from the game, of a fully abstract system of concepts that describes the functioning of a given form of social organization.

A part, and perhaps the most important part, of this methodology, is the study of types of rules in games and in social organization generally. It is clear that rules are of very different types - for example, precedural rules which define the required procedure, such as parliamentary rules in legislatures, as contrasted with rules that specify the obligations incumbent upon the player



in a given role, and as contrasted with rules that concern only the punishment of behavior that breaks other rules.

Since rules are at the center of this methodology, such a typology of rules, or recipe or theory about the types of rules necessary for a game representing a social organization, will allow the method to progress beyond an art. For when such a theory of rules of social organization does exist, then it will become possible to create systematic variations in games, rather than merely ad hoc ones, and a methodology comparable for sociology comparable to that of the physicist's or psychologist's experimentation will exist.



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